

Implementing
the
Texas Water Plan



IMPLEMENTING THE TEXAS WATER PLAN

This document will not provide a single drop of additional water to Texas water users, unless it is translated into a concerted vigorous action plan supported by all Texas citizens and responsible levels of government to finance and construct the needed facilities for water storage and conveyance. Requirements for making the Texas Water Plan a reality include:

Intergovernmental Relationships and Responsibilities

The State's participation in water planning and development is essential if Texas is to have a voice in the management of its water resources. The facilities required to supply water to Texas involving directly the State of Texas and the United States are:

(1) *The Interstate System*—those works required to divert from the Mississippi River and convey water to the Texas-Louisiana State line.

(2) *The Texas Water System*—those facilities within the State of Texas required to protect, conserve, transport, and distribute Texas' intrastate water resources and Texas' share of interstate waters for various purposes throughout the State, and to regulate and transport water from out-of-State sources brought to the State line through the Interstate System to users in Texas. The conveyance works of the Texas Water System would also transport water from the Mississippi River to the State of New Mexico.

Federal-State-Local Actions

(1) The Board should complete the planning for the Texas Water System and participate in the preparation of feasibility reports with the Federal agencies.

(2) The Interstate System should be designed and constructed by such agency or agencies as Congress may direct.

(3) The most economical pumping energy for the Texas Water System should be provided, possibly by nuclear-fueled generating plants, and transmission

systems jointly financed by the United States, the State of Texas, and the investor-owned utilities.

(4) Most of the units of the Texas Water System should be designed and built by the Corps of Engineers and the Bureau of Reclamation; some may be designed and constructed by the Board and/or by local agencies. The Board's involvement in design and construction will be minimal, but the Board must maintain liaison with the Federal and local agencies in design, and must monitor work on design and construction to insure that Texas' interests are properly taken into consideration and protected.

(5) For those units of the Texas Water System designed and constructed by the Federal agencies, the State of Texas must provide a substantial portion (20-35%) of the funds required for engineering and construction on a partnership basis with the United States. This partnership arrangement would be on the basis of investments in the total System by the United States and by the State of Texas, rather than on the basis of ownership of a specific facility or of a particular portion of a facility. One possible solution to this complex financial arrangement would be the establishment of a "Texas Water System Construction Fund" by the Congress, into which Federal appropriations and State monies from the Texas Water Development Fund for construction would flow and from which payments for engineering work by the Federal agencies and for construction would be made. This Fund would be administered by the United States.

(6) For those units to be designed and built by local agencies (or by the Federal agencies for local interests) but from which some water is to be derived for interbasin transfers through the Texas Water System either on an interim or long-term basis, the Board would participate financially either by purchase of storage, or by purchase of water. This would necessitate the negotiation and execution of purchase and operating agreements with such local agencies.

(7) The Board would hold appropriate rights to water conveyed through the Texas Water System.

(8) The Board would execute the base contract with the United States for repayment of that

portion of the reimbursable Federal investment in the intrastate facilities allocated to Texas. The Board would in turn execute contracts with local agencies for their purchase of water, thus obtaining revenues to meet its obligations to the United States, to repay the State's investment, and to cover operation, maintenance, and management expenses. These water contracts would provide the financial security for the base repayment contract with the United States. Federal laws and policies regarding reimbursability and repayment will apply except as to the interest rate to be charged on the investment from the Texas Water Development Fund.

(9) The Board would assist local interests in the formation of master districts with adequate powers to enter into water service contracts with the State of Texas in those areas where such political subdivisions do not now exist.

(10) The Board would purchase water at the State line from the United States, or from some agency thereof, for conveyance and sale through the Texas Water System.

(11) Under agreement with the United States and the State of New Mexico, the Board would convey the water to be imported into New Mexico from the Mississippi River through the Texas Water System.

(12) The Board would operate and maintain, and be responsible for administration and fiscal management of the Texas Water System as elements thereof are completed by the Federal agencies, except for those units which are to be operated, maintained, and managed by local agencies. Fulfillment of this responsibility will entail the negotiation and execution of a master agreement with the United States, and of operating agreements with holders of existing and authorized projects on streams on which Texas Water System conservation units are to be built.

(13) Responsibility for operation, maintenance, and management of the Interstate System should be vested in such agency as Congress may direct.

The key element in carrying out the above actions is the assurance of an effective responsible relationship between the United States and the State of Texas within which each level of government can assume its proper authority and discharge its appropriate obligations. Similarly, responsible relationships between the Board and other State agencies, between the Board and local political subdivisions, and between the Board and water agencies in other States must be established and actively maintained.

These relationships should be formally organized in such a way that effective working partnerships are possible. This organization might be formulated along these lines:

(a) Memoranda of understanding with the Bureau of Reclamation and the Corps of Engineers, the major Federal construction agencies, establishing institutional arrangements required to achieve coordination of planning, and the policies and criteria under which the Texas Water System is to be presented to the Congress and the State of Texas as a joint Federal-State-Local project.

(b) Permanent committees with representatives of the Board, the Bureau of Reclamation, the Corps of Engineers, and of other States or agencies as appropriate. A Policy Committee is needed for review and decision making; a Planning Committee to formulate objectives, policies, and criteria under which the Texas Water System will be developed for consideration of the Policy Committee; and staff committees responsible to the Planning Committee for analysis of hydrology, water requirements, economics, and design.

(c) The Congress to set forth in the authorization for Federal participation in the Texas Water System and in the Interstate System the basic policies under which cooperative Federal-State implementation will proceed. These policies would establish the terms under which the Board would assume responsibility for operation, maintenance, and management of the Texas Water System and guarantee repayment of the reimbursable Federal costs allocated to Texas. Since out-of-State elements will be involved, a special commission or agency, with specifically defined powers and duties should be created by parallel or complementary actions of the Congress and the States to oversee the construction, operation and maintenance, and management of the Interstate System, and to insure that the interests of both the United States and the States are protected.

(d) For projects not a part of the Texas Water System, the Board will maintain active liaison with the Federal construction agencies (Corps of Engineers, Bureau of Reclamation, and Soil Conservation Service), and with concerned local entities, and will take appropriate actions on pre-project planning, investigations, authorizations, final planning, and construction.

State Coordination

The Board will coordinate the interests and participation of other State agencies in planning for construction and operation of the Texas Water System and related projects, by direct liaison between the executive head of the Board with other State agencies, or by designated staff principals of the Board with other State agencies.

The Board will work closely with river authorities, major cities, and other entities. Continuing communication and coordination is essential with these regional and local interests regarding immediate and long-range

planning, operational criteria of local projects consistent with objectives of the Texas Water Plan, contractual agreements on various features, and joint participation in project financing.

This continuing communication and coordination is especially important on projects not directly related to the Texas Water System such as channeling for flood control, hurricane and tidal flood protection, coastal navigation, upstream watershed protection programs, and drainage facilities.

Interstate Coordination

The Board will continue to participate in programs of interstate cooperation including:

- (1) Necessary activities relating to interstate and international streams bordering or crossing Texas;**
- (2) National or regional water associations or councils such as National Rivers and Harbors Congress, the National Reclamation Association, Interstate Conference on Water Problems, the Council of State Governments, the Southern States Water Conference; and**
- (3) Interstate groups such as the Western States Water Council and cooperation with the States adjacent to Texas with regard to importation of water from out-of-State, including continuing interest and cooperation in regional systems which have been proposed such as the North American Water and Power Alliance.**

System Management

The planning, design, construction, operation, and management of the facilities proposed in the Texas Water Plan will require the application of the most advanced concepts and methods of analysis to solution of problems and to aid in management decisions. The mass of data involved in this complex System of dams, reservoirs, power plants, diversion facilities, pumping plants, and navigation facilities is so massive that application of advanced techniques of data management and processing are essential. When all of these facilities are in place, their integrated operation and management will require a completely automated system.

Master Districts

No construction will begin, and no water can move to any area to be served by the Texas Water System, until there is a firm commitment on the part of a responsible political entity to contract for the repayment of the reimbursable System costs allocated to the area. Where irrigation is to be served by the Texas Water

System, master districts must be available to make contract commitments. Although these master districts may take varying forms—creation of a new district, combination of a group of districts, or the enlargement of areas and functions of existing districts—a number of broad powers will be needed. These powers, not necessarily all applicable to any given area, include but are not limited to the following:

- (1) Power to contract for a water supply and to assure repayment of the costs for such a supply.**
- (2) Power to contract with local entities or subdistricts for “retail” distribution of water.**
- (3) Power to borrow money and incur indebtedness, issue bonds, levy taxes, and take all other required responsible financial actions necessary to repay obligations for the delivery of water.**
- (4) Power to charge direct water tolls and charge indirect beneficiaries who obtain water from underground sources recharged as a consequence of delivery and use of water through the Texas Water System.**

The Board, appropriate to its statutory duties, will assist local areas in any way in establishing viable political entities with authority and financial competence to assume contractual obligations required under the Texas Water System.

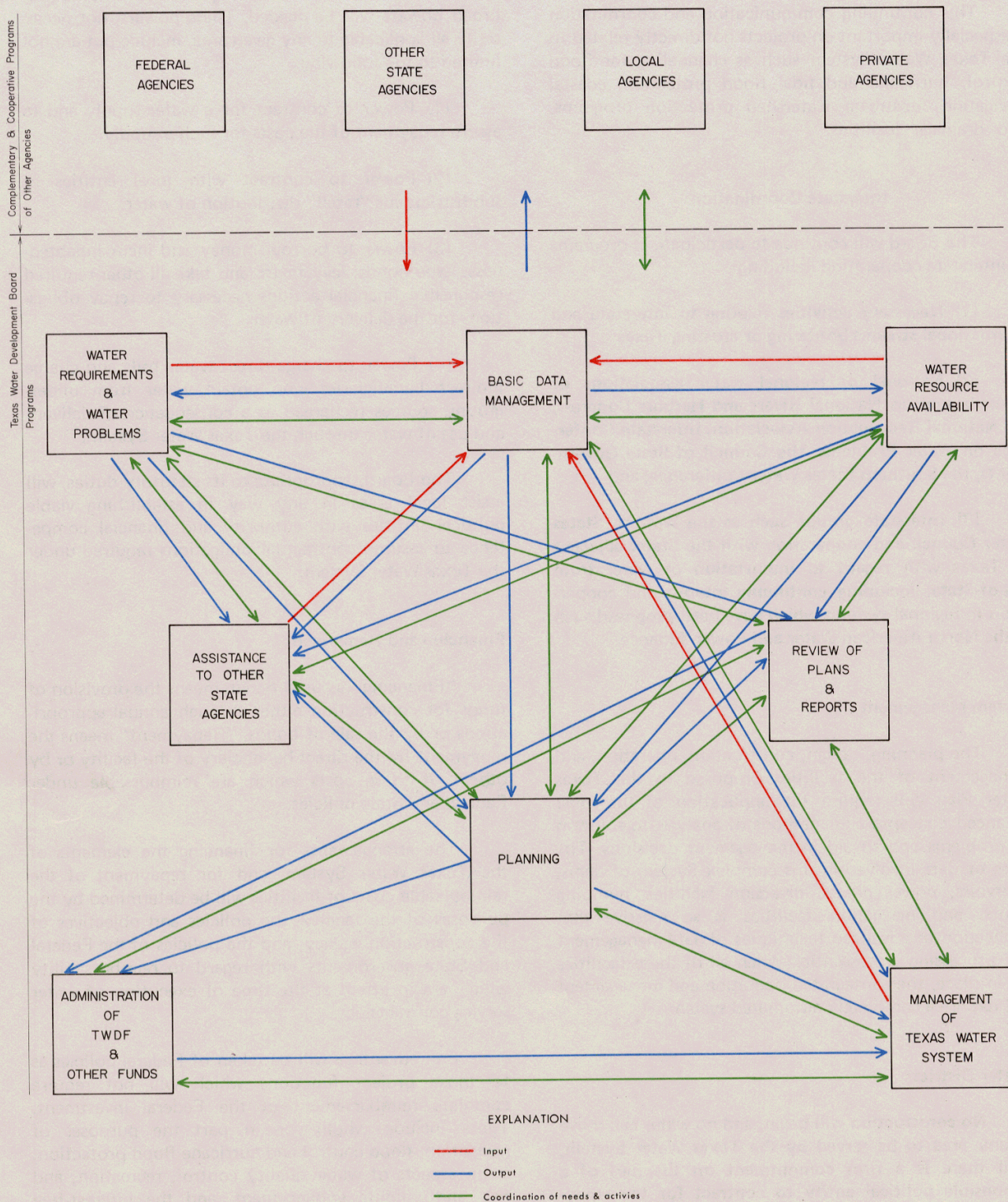
Financing and Repayment

“Financing” as used herein means the provision of funds for construction either through annual appropriations or by the sale of bonds. “Repayment” means the repayment by the direct beneficiary of the facility or by others of those costs which are reimbursable under Federal and State policies.

The arrangements for financing the elements of the Texas Water System, and for repayment of the reimbursable costs of facilities will be determined by the purposes of the facility, the policies and objectives of the construction agency, and the policies of the Federal and State governments with regard to reimbursability which are in effect at the time of execution of water service contracts.

Full advantage will be taken of Federal policies as to those project functions which will not require complete reimbursement of the Federal investment. These include wholly or in part the purposes of navigation, flood control and hurricane flood protection, some aspects of water quality control, recreation, and fish and wildlife enhancement, and the interest-free provisions of Reclamation Law as regards the Federal investment allocated to irrigation.

MAJOR PROGRAMS OF TEXAS WATER DEVELOPMENT BOARD



Cost of other project functions will be financed jointly by the Federal Government and the State, and in some cases by local interests.

The Texas Water System will be financed as a joint Federal-State and local enterprise. Water delivered into the System from out-of-State sources will be purchased at the State line by the Board from the Interstate System.

The Board will operate and manage the principal facilities of the Texas Water System as these facilities are constructed. This will require the negotiation of a master agreement with the United States. The Board will also guarantee repayment of the reimbursable Federal costs under the terms of this master agreement, including guarantee of payment for water purchased from the Interstate System. The obligations incurred by the State in this agreement with the United States will be underwritten by contracts negotiated by the State with master districts receiving water delivered through the System.

Board Program

Plate 1 outlines the steps that must be taken by the State and Federal governments if the Texas Water Plan is to become a reality. The controlling time schedule is keyed to times at which essential actions must be taken to assure that first deliveries of water to the High Plains and other areas through the Texas Water System will meet critical times of water demand. The Board has scheduled each of its major programs to meet the target dates shown on Plate 1.

The following summary of major programs is descriptive only, rather than inclusive of every task. Detailed schedules and budgets will guide each program.

Water Requirements and Water Problems

This program involves the continuing evaluation of water requirements and water problems throughout the State of Texas.

Required are projections of future population and economic development, both for local areas and the State as a whole; future State and National demands for irrigated crops; soil classification studies, particularly as these relate to application of water for irrigation; land use plans; projections of future irrigated acreages and locations; unit use values for municipal and industrial demands; consumptive use of water by irrigated crops; studies of irrigation efficiency; future recreation demands; fish and wildlife demand studies; and hydraulic, hydrologic, biologic, and economic studies of the bays and estuaries.

Basic Data Management

This program relates to compiling, collecting, storing, retrieving, presenting, and publishing basic data obtained under other Board programs, from other State agencies, from Federal and local agencies, and from private interests. The Board is actively working with other State agencies in inventorying and evaluating all available water-oriented data and in determining future requirements for basic data of all kinds to effectively implement the Texas Water Plan.

All of these data are essential to sound water planning and for the effective and economic development and utilization of the limited water resources which are now or may become available to Texas. To proceed without adequate basic data and a proper data management program would cost the water users of Texas hundreds of millions of dollars.

Because water resource systems are dynamic and continually changing due both to natural phenomena and to the effects of man's activities, the longer, more continuous and complete the historical records, and the greater the frequency of observations, the more valuable and useful the data will be.

Water Resource Availability

The collection, analysis, and use of data relating to the occurrence and quality of all sources of water is essential to determining the location and quantitative and qualitative characteristics of the available resource.

Hydrologic studies have been made for all present and proposed reservoirs in the Texas Water System. Their physical characteristics, operational effects upon one another and on the System as a whole, quality of water now and under future conditions, and their yields under present and future conditions have been examined. These refined studies must be conducted for all of the river basins of the State.

Studies providing information on the geology, hydrology, and hydraulic characteristics of ground water basins at a level suitable for general planning have been completed for approximately 40% of the State. These studies, however, must now be refined, and new techniques of analysis applied for each of the ground water basins upon which the State must rely.

Assistance to Other State Agencies

The Board is necessarily involved in this Plan with all State agencies and colleges and universities whenever related functions touch on water resource matters. Individual Board programs provide necessary assistance to PACT—Planning Agency Council for Texas—Texas

Water Rights Commission, Texas Water Quality Board, Parks and Wildlife Department, Railroad Commission, and Water Well Drillers Board.

This structured relationship between State agencies engaged in corollary activities is essential to an effective State management system designed to avoid duplication of effort while meeting fully the State's governmental needs. Conceptually, these relationships must be flexible and responsive to the increasing need for a multidisciplinary approach to common problems which does not penalize the State by duplicating either services or professional competence.

Review of Plans and Reports

The Board will review reports prepared by Federal, State, and local entities on water projects and analyze their import to the State's total water development picture in the context of the Texas Water Plan.

Planning

Sound continued planning is especially important in Texas where internally available water resources are inadequate to meet rapidly expanding Statewide demands, and where the cost of water development and conveyance will be high.

Texas water planning studies described in this report have been, of necessity, conducted at a reconnaissance level. These plans must now be refined and detailed so as to serve adequately for feasibility level reports, as a basis to proceed with design at the proper time, and to provide the basis for decisions which will insure the most efficient use of intrastate waters.

Economic and financial analyses must be refined prior to the presentation of feasibility reports to the Congress for authorization of Texas Water Plan facilities, and to form the basis for execution of water service contracts. These analyses, which the State must assume the responsibility of preparing and supporting to the Congress, must be adequately detailed to provide assurance to the Congress that the benefits to the State and to the Nation justify the costs of the Plan; and that the repayment capability of those areas to which water will be taken is adequate to reimburse the Federal investment to the extent required by Federal laws and policies.

Administration of Texas Water Development Fund and Other Funds

The Texas Water Development Fund was created by Constitutional amendment in 1957. The purpose of the Fund's establishment was to make loans to local governmental entities sponsoring construction of projects for the conservation and development of the State's water resources. Further Constitutional amendments in 1962 and 1966 broadened the authority of the Board in

administering the Fund to include powers to acquire conservation storage facilities in reservoirs to be constructed on Texas streams and for any system or works necessary for the filtration, treatment, and/or transportation of water by Federal or local governmental agencies to the end that the remaining reservoir sites in Texas may be developed to their optimum potential. The program administered by the Board is currently limited by Constitutional provision to \$400,000,000 provided that the last \$200,000,000 be approved by a two-thirds majority of each House of the Texas Legislature. By Constitutional provision, the Board is limited to a maximum investment in any one local project, and further restricted to an aggregate investment of \$100,000,000 in all reservoir conservation storage facilities.

The State of Texas must continue to share in the costs of Texas water development throughout the period of implementing the Texas Water Plan if it is to provide the assistance that will be needed in water development.

The authorization by the Legislature and the citizens of Texas of an augmented Texas Water Development Fund will be necessary before feasibility reports for the Texas Water System go to Congress for authorization in order that Texas can be in a strong position to say that the State is ready to accept its share of the responsibility for meeting its water needs.

Management of Texas Water System

This is a new program designed to carry out Board responsibilities for operation, maintenance, and administrative and fiscal management of the Texas Water System.

While actual operation, maintenance, and administrative and fiscal management of specific elements of the System will not start until 1979, certain necessary preliminary actions must be initiated now as indicated on Plate 1.

Operation of any system as complex as the Texas Water System must be fully automated to achieve maximum efficiency and economy. Only one similar system, the California State Water Project, which is much less complex, has been designed for automated operation. The Board must provide the design concepts and the research needed for automated operation.

Hundreds of millions of dollars in revenue will be generated annually by sales of water from the Texas Water System. Millions of acre-feet of water will be moved through the System to a wide variety of water users. There is no precedent for the management of a complex water resource system on this scale, and experienced management capability must, therefore, be developed over time to assume control as the elements of the System become operational.